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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
U.S. NATIONAL FILING UNDER 35 USC §371

In Re U.S. National Patent Application of:
Conor MULROONEY et al.

U.S. Serial No. 09/936,382
Filed September 10, 2001
From: PCT/GB00/00921 filed March 13, 2000

For: ENZYMATICALLY CATALYSED SIGNAL AMPLIFICATION

SECOND
PRELIMINARY AMENDMENT

COMMISSIONER FOR PATENTS
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ATTN: BOX PCT/WITH FEE

Prior to examining the application identified above, please amend the application as follows. Note that this amendment is being submitted in accordance with 37 CFR 1.121.

IN THE CLAIMS:

Please add the following new claims:

36. A method for detecting a target molecule according to claim 3, prior to said detection step additionally comprising performing a method according to steps (ii) and (iii) of claim 11.

37. A method for detecting a target molecule according to claim 5, prior to said detection step additionally comprising performing a method according to steps (ii) and (iii) of claim 11.

38. A method for detecting a target molecule according to claim 1, prior to said detection step additionally comprising performing a method according to steps (ii) and (iii) of claim 12.

39. A method for detecting a target molecule according to claim 3, prior to said detection step additionally comprising performing a method according to steps (ii) and (iii) of claim 12.

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40. A method for detecting a target molecule according to claim 5, prior to said detection step additionally comprising performing a method according to steps (ii) and (iii) of claim 12.

41. A method for detecting a target molecule according to claim 12, prior to said detection step additionally comprising performing step (ii) of a method according to claim 1.

42. A method for detecting a target molecule according to claim 11, prior to said detection step additionally comprising performing step (ii) of a method according to claim 3.

43. A method for detecting a target molecule according to claim 12, prior to said detection step additionally comprising performing step (ii) of a method according to claim 3.

44. A method for detecting a target molecule according to claim 11, prior to said detection step additionally comprising performing step (ii) of a method according to claim 5.

45. A method for detecting a target molecule according to claim 12, prior to said detection step additionally comprising performing step (ii) of a method according to claim 5.

46. A method for detecting a target molecule according to claim 12, said amplification moiety of said locator probe or additional locator probe from said final amplification step comprising a nucleic acid sequence, and prior to said detection step additionally comprising performing step (ii) of a method according to claim 1.

47. A method for detecting a target molecule according to claim 11, said amplification moiety of said locator probe or additional locator probe from said final amplification step comprising a nucleic acid sequence, and prior to said detection step additionally comprising performing step (ii) of a method according to claim 3.

48. A method for detecting a target molecule according to claim 12, said amplification moiety of said locator probe or additional locator probe from said final amplification step comprising a nucleic acid sequence, and prior to said detection step additionally comprising performing step (ii) of a method according to claim 3.

49. A method for detecting a target molecule according to claim 11, said amplification moiety of said locator probe or additional locator probe from said final amplification step comprising a nucleic acid sequence, and prior to said detection step additionally comprising performing step (ii) of a method according to claim 5.

50. A method for detecting a target molecule according to claim 12, said amplification moiety of said locator probe or additional locator probe from said final amplification step

comprising a nucleic acid sequence, and prior to said detection step additionally comprising performing step (ii) of a method according to claim 5.

51. A method for detecting a target molecule according to claim 3, the step of detecting any bound amplification template comprising the steps of:

i) treating said sample, locator probe and amplification template or amplification templates with a detection probe which binds specifically to said amplification moiety of the last of said amplification templates; and

ii) detecting any bound detection probe.

52. A method for detecting a target molecule according to claim 5, the step of detecting any bound amplification template comprising the steps of:

i) treating said sample, locator probe and amplification template or amplification templates with a detection probe which binds specifically to said amplification moiety of the last of said amplification templates; and

ii) detecting any bound detection probe.

53. A method for detecting a target molecule according to claim 18, the step of detecting any bound amplification template comprising the steps of:

i) treating said sample, locator probe and amplification template or amplification templates with a detection probe which binds specifically to said amplification moiety of the last of said amplification templates; and

ii) detecting any bound detection probe.

54. A method for detecting a target molecule according to claim 19, the step of detecting any bound amplification template comprising the steps of:

i) treating said sample, locator probe and amplification template or amplification templates with a detection probe which binds specifically to said amplification moiety of the last of said amplification templates; and

ii) detecting any bound detection probe.

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55. A method for detecting a target molecule according to claim 12, the step of detecting any bound amplification template comprising the steps of:

i) treating said sample, locator probe and amplification template with a detection probe which binds specifically to said amplification moiety of the last of said amplification templates; and

ii) detecting any bound detection probe.

56. A method according to claim 3, the amplification step being performed two or more times, each amplification step being performed using an amplification template having a different extension nucleic acid sequence, hybridisation nucleic acid sequence and amplification moiety to that of the amplification template used in the previous amplification step.

57. A method according to claim 5, the amplification step being performed two or more times, each amplification step being performed using an amplification template having a different extension nucleic acid sequence, hybridisation nucleic acid sequence and amplification moiety to that of the amplification template used in the previous amplification step.

58. A method according to claim 11, the amplification step being performed two or more times, each amplification step being performed using an amplification template having a different extension nucleic acid sequence, hybridisation nucleic acid sequence and amplification moiety to that of the amplification template used in the previous amplification step.

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59. A method according to claim 12, the amplification step being performed two or more times, each amplification step being performed using an amplification template having a different extension nucleic acid sequence, hybridisation nucleic acid sequence and amplification moiety to that of the amplification template used in the previous amplification step.

60. A method according to claim 3, the target molecule to be detected being a nucleic acid sequence and the binding moiety of said locator probe comprising a nucleic acid sequence complementary to said target molecule nucleic acid sequence.

61. A method according to claim 5, the target molecule to be detected being a nucleic acid sequence and the binding moiety of said locator probe comprising a nucleic acid sequence complementary to said target molecule nucleic acid sequence.

62. A method according to claim 11, the target molecule to be detected being a nucleic acid sequence and the binding moiety of said locator probe comprising a nucleic acid sequence complementary to said target molecule nucleic acid sequence.

63. A method according to claim 12, the target molecule to be detected being a nucleic acid sequence and the binding moiety of said locator probe comprising a nucleic acid sequence complementary to said target molecule nucleic acid sequence.

64. A method according to claim 3, being performed using more than one locator probe, each locator probe having the same amplification nucleic acid sequence.

65. A method according to claim 5, being performed using more than one locator probe, each locator probe having the same amplification nucleic acid sequence.

66. A method according to claim 11, being performed using more than one locator probe, each locator probe having the same amplification nucleic acid sequence.

67. A method according to claim 12, being performed using more than one locator probe, each locator probe having the same amplification nucleic acid sequence.

68. A method according to claim 3, comprising two repeats.

69. A method according to claim 5, comprising two repeats.

70. A method according to claim 11, comprising two repeats.

71. A method according to claim 12, comprising two repeats.

72. A method according to claim 3, unreacted reagents being removed at the end of step (i), each repeat, or detection step by washing.

73. A method according to claim 72, the unreacted reagents being selected from the group of locator probe, amplification template, and detection probe.

74. A method according to claim 5, unreacted reagents being removed at the end of step (i), each repeat, or detection step by washing.

75. A method according to claim 74, the unreacted reagents being selected from the group of locator probe, amplification template, and detection probe.

76. A method according to claim 11, unreacted reagents being removed at the end of step (i), each repeat, or detection step by washing.

77. A method according to claim 76, the unreacted reagents being selected from the group of locator probe, amplification template, and detection probe.

78. A method according to claim 12, unreacted reagents being removed at the end of step (i), each repeat, or detection step by washing.

79. A method according to claim 78, the unreacted reagents being selected from the group of locator probe, amplification template, and detection probe.

No new matter is being added through these amendments. Applicant respectfully requested entry of the above amendments.

Respectfully submitted,

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Susan M. Franklin